

REMARKS

The Office Action dated March 26, 2003, has been received and carefully noted. The above amendments to the drawings and claims, and the following remarks, are submitted as a full and complete response thereto.

By this amendment, the drawings and claims 2 and 5 have been amended. New claims 6 and 7 have been added. No new matter has been added. Claims 1-7 are respectfully submitted for consideration.

The drawings were objected to for minor informalities. Attached hereto is a Request for Approval of Drawing Corrections along with proposed changes to Figures 15-18. In the drawings, Figures 15-18 were labeled as "Prior Art". In Figure 16, the reference sign 101, discussed on page 1 line 24 of the specification, was added.

Claims 1, 2, 4, and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bagepalli et al. (U.S. Patent No. 6,030,175, "Bagepalli") in view of Tong (U.S. Patent No. 6,431,550). Claims 2, 4 and 5 depend from claim 1. Bagepalli was cited for disclosing many of the claimed elements of the invention with the exception of each of the splitting direction-extending surfaces having shutoff means for sealing a gap between the splitting direction-extending surfaces that are combined with each other. Tong was cited for curing these deficiencies. The Applicant traverses the rejection and respectfully submits that claims 1, 2, 4, and 5 recite subject matter that is neither disclosed nor suggested by the cited prior art.

Claim 1 recites a brush seal device in which splitting surfaces of a plurality of split-body parts are combined with one another and which is mounted to one of

opposed component members so as to seal a gap between the component members. The brush seal device includes a brush seal formed in a wall shape in the longitudinal direction of a fixture portion which is fixed at one end thereof. Split-body parts hold the brush seal and each of which has connecting portions that are split and that extend along the splitting surfaces. Each of the splitting surfaces is composed of splitting direction-extending surfaces that extend in such a direction as to split the split-body parts, and a longitudinal surface that extends in the longitudinal direction of the split-body parts forming a step interposed between the splitting direction-extending surfaces. Each of the splitting direction-extending surfaces has shutoff means for sealing a gap between the splitting direction-extending surfaces that are combined with each other.

As a result of the claimed invention, shut off means for sealing sealed fluid is disposed between the splitting direction-extending surfaces in a brush seal device. Therefore, even if one of the component members, for example, the rotational shaft, wobbles during rotation and comes into tight contact with the brush seal, leakage of sealed fluid from the gap between the splitting surfaces is effectively prevented. In addition, the brush seal device of the present invention prevents leakage of sealed fluid from the gap between the splitting surfaces by the shutoff means even if a gap has been created between the splitting surfaces. Therefore, even if a pressing force resulting from, for example, oscillation of the rotational shaft or the like, is applied to the brush seal device that is held in a springy manner from the outer peripheral side by a spring, for example, the brush seal device can be deformed effectively increasing or reducing its inner diameter in accordance with the pressing force. The Applicant respectfully submits that the prior art fails to disclose or suggest the claimed features of

the invention and thereby fails to provide the critical and non-obvious advantages that are provided by the invention.

Bagepalli discloses a hybrid seal having back plate 66 and upstream plate 68 of bristle holder 64 which is dividable along a circumferential direction.

Tong discloses a brush seal 52 mounted in a T-shaped slot 60 defined in a circumferential end of one of the seal ring segments 112.

As a preliminary matter, the Applicant respectfully submits that Bagepalli fails to disclose an additional feature of the invention not noted in the Office Action. Claim 1 recites, split-body parts which hold the brush seal and each of which has connecting portions that are split and that extend along the splitting surface. In contrast, Bagepalli fails to disclose split body parts having connecting portions that are split and that extend along the splitting surfaces. The Office Action took the position that the mounting block 30 was comparable to the connecting portions and that the ends 56, 58, 60, 62 were comparable to the splitting surfaces. However, the Applicant submits that the mounting 30 block does not extend along the ends 56, 58, 60, 62 in Bagepalli. Bagepalli discloses that the mounting block 30 extends around the first and second labyrinth seal segments 26, 28. As such there is no disclosure or suggestion in Bagepalli of split-body parts having connecting portions that are split and that extend along the splitting surface as recited in claim 1.

In addition, with respect to the noted rejection of claims 1, 2, 4 and 5, the Applicant respectfully submits that the combination of Bagepalli and Tong fails to disclose or suggest the claimed features of the invention. As acknowledged in the Office Action, Bagepalli fails to disclose that each of said splitting direction-extending

surfaces has shutoff means for sealing a gap between said splitting direction-extending surfaces that are combined with each other. Tong however, fails to cure this deficiency as Tong merely discloses a segment seal 52 which has no shutoff means. The shutoff means recited in the claims, is a means-plus-function limitation under 35 U.S.C. §112, sixth paragraph. As a means-plus-function limitation, the shutoff means must be construed to cover the corresponding structure described in the specification and equivalents thereof that perform the function recited therein. Consequently, the prior art must actually perform the recited function. See MPEP §2183. Tong fails to disclose or suggest the structure of the shutoff means disclosed in the specification and performing a shut off. Accordingly, the combination of Bagepalli and Tong fail to disclose or suggest each and every feature of the invention as recited in claim 1. Therefore, the Applicant respectfully submits that the Office Action has failed to establish a *prima facie* case of obviousness for purposes of a rejection of claims 1, 2, 4, and 5 under 35 U.S.C. §103.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Bagepalli in view of Tong and further view of Julien et al. (U.S. Patent No. 5,226,683, "Julien"). Bagepalli and Tong were cited for disclosing many of the claimed elements of the invention with the exception of the shutoff means having a sealing plate made from a super-elastic alloy material on the contact surfaces. Julien was cited for curing this deficiency. The Applicant respectfully submits that claim 3 recites subject matter that is neither disclosed nor suggested by the cited prior art.

Julien discloses a reusable metallic seal using memory metal.

With respect to claim 3 the Applicant respectfully submits that the combination of Bagepalli, Tong and Julien fails to disclose or suggest the claimed features of the invention. Claim 3 depends from claim 1. As discussed above, Bagepalli and Tong fail to disclose the split-body parts having connecting portions that are split and that extend along the splitting surface, and a shutoff means as recited in claim 1. Julien fails to cure the above-noted deficiencies in Bagepalli and Tong as the reference does not disclose or suggest split-body parts having connecting portions that are split and that extend along the splitting surface, and a shutoff means. As such, Bagepalli, Tong, and Julien, either singly or in combination, fail to disclose or suggest the features of the invention as recited in claim 1 and, therefore, dependent claim 3. Therefore, the Applicant respectfully submits that the Office Action has failed to establish a *prima facie* case of obviousness for purposes of a rejection of claim 3 under 35 U.S.C. §103.

The Applicant further submits that Bagepalli, Tong and Julien do not disclose or suggest the features of the invention as recited in new claims 6 and 7 for similar reasons as discussed above with respect to claim 1.

Claims 1-7 are pending. Claims 2-5 depend from claim 1. The Applicant respectfully submits that these dependent claims are allowable for their dependency from allowable base claim 1 as well as for the additional subject matter recited therein. Accordingly, the Applicant respectfully requests allowance of claims 1-7 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the

undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, referencing attorney docket no. 108179-00006.

Respectfully submitted,


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Enclosure: Request for Approval of Drawing Corrections